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| 10/596,717 | 10/10/2006 | David Denoon-Stevens | 11ES206689 | 9897 |
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| General Electric Company GE Global Patent Operation PO Box 861 2 Corporate Drive, Suite 648 Shelton, CT 06484 | | | EXAMINER CLAWSON, STEPHEN J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 4172 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/596,717

Applicant(s)

DENOON-STEVENSON ET AL.

Examiner

STEPHEN CLAWSON

Art Unit

4172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/10/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 8/4/2006.

DETAILED ACTION

Applicants claims as part of their invention both a network, claims 1-5, and a network loop monitor, claims 6-9. Examiner will address these claims in numerical order.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, & 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Costa et al. (U.S. Pat. No. 5787258) in view of Doviak et al. (U.S. Pub. No. 2003/0017845 A1).

Regarding claim 1, Costa discloses a life safety system comprising a network of panels, each panel including a central processing module (CPU) and a plurality of local I/O modules connected to said CPU and to each other. (See Costa, Col. 2 lines 27-34). Costa further teaches a class A ring network using the physical link layer utilizing RS-485 ports. (See Costa, Col. 3 lines 39-42).

Costa utilizes two RS-485 ports to connect the network panels into the system. (See Costa, Fig. 1). Applicant utilizes three RS-485 ports providing a separation of the network monitor and the host. However, Doviak teaches the interconnection of networks using routers which operate at the network level and convey messages

between compatible networks. (See Doviak, Para. 10). Specifically mentioned is the routing of data through networks using a token-ring. (See Doviak, Para. 10). Doviak shows terminals or personal computers connected to a router which, in turn, is connected to a communications network. (See Doviak, Fig. 1).

In light of these two references and the lessons learned from them, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention was made to separate the network monitor from the host and connect the two devices via a RS-485 port, thus providing for switching out of damaged or malfunctioning hosts while not interrupting the integrity of the network.

Regarding claim 2, the combination of Costa and Doviak teaches the network of claim 1 further including router logic under the control of a microprocessor for controlling the transmission of data through the monitor. (See Costa, Col. 2 lines 28-45).

Regarding claim 3, the combination discloses a class A ring configuration utilizing jumpers to designate the master panel and subsequent slave panels to physically map the network. (See Costa, Col. 11, lines 47-55). Although Costa does not specifically mention the use of a transceiver, the system must contain a receiver and a transmitter or a transceiver to work. Finally, as already mentioned in the claim 1 discussion, Doviak teaches isolating the host from the router logic. (See Doviak, Para. 10 & Fig. 1).

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Costa et al. (U.S. Pat. No. 5787258) in view of Doviak et al. (U.S. Pub. No. 2003/0017845 A1) and further in view of Binder (U.S. Pub. No. 2002/0159402 A1).

Regarding claim 4, Costa teaches a ring network that detects a panel failure. (Col. 8 lines 30-50). When data cannot be passed beyond the down panel due to communication problems, the nodes of the network must reconfigure so as to bypass the down panel. (Col. 8 lines 30-50). Essentially, the routing logic contained within the panel is bypassed from the loop. Although Costa does not specifically mention the use of a transceiver, the system must contain a receiver and a transmitter or a transceiver to work. However, Binder discloses the use of a RS-485 transceiver using termination at each end of a connection. (Para. 57-58).

In light of these references, claim 4 is rendered obvious to one of ordinary skill in the art at the time of the claimed invention was made because termination is a well understood concept in RS-485 technology involving providing electrical resistance and fail safe biasing at the end of a line to prevent signal reflections.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Costa et al. (U.S. Pat. No. 5787258) in view of Doviak et al. (U.S. Pub. No. 2003/0017845 A1) and in further view of Desmarais (Desmarais, Louis. Applied Electro-Optics. Prentice Hall 12/5/1997) and Curray et al. (U.S. Pub. No. 2003/0084112 A1).

Regarding claim 5, the combination of references discloses the use of an optocoupler for electrical isolation between the two internal elements. (See Desmarais,

Pg. 244). Optocouplers are commonly used for high voltage isolation to protect the receiver circuit from any damaging over-voltage produced from switching or lightning induced surges. (See Desmarais, Pg. 244). Although Applicant's claimed invention does not use high voltage, optocouplers are also used to protect against electrostatic discharges or surges. The combination of references further describes a RS-485 communication interface that utilizes optical isolation to protect against electrostatic discharges. (See Curry, Para. 55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention was made to utilize an optocoupler for separation and protection of various parts of the network.

4. Claims 6 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Costa et al. (U.S. Pat. No. 5787258) and Doviak et al. (U.S. Pub. No. 2003/0017845 A1).

Regarding claim 6, Costa discloses a life safety system comprising a network of panels, each panel including a central processing module (CPU) and a plurality of local I/O modules connected to said CPU and to each other. (See Costa, Col. 2 lines 27-34). Costa further teaches a class A ring network using the physical link layer utilizing RS-485 ports. (See Costa, Col. 3 lines 39-42).

Costa utilizes two RS-485 ports to connect the network panels into the system. (See Costa, Fig. 1). Applicant utilizes three RS-485 ports providing a separation of the network monitor and the host. However, Doviak teaches the interconnection of networks using routers which operate at the network level and convey messages

between compatible networks. (See Doviak, Para. 10). Specifically mentioned is the routing of data through networks using a token-ring. (See Doviak, Para. 10). Doviak shows terminals or personal computers connected to a router which, in turn, is connected to a communications network. (See Doviak, Fig. 1).

In light of these two references and the lessons learned from them, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention was made to separate the network monitor from the host and connect the two devices via a RS-485 port, thus providing for switching out of damaged or malfunctioning hosts while not interrupting the integrity of the network.

Regarding claim 7, the combination discloses a class A ring configuration utilizing jumpers to designate the master panel and subsequent slave panels to physically map the network. (See Costa, Col. 11, lines 47-55). Although Costa does not specifically mention the use of a transceiver, the system must contain a receiver and a transmitter or a transceiver to work. Finally, as already mentioned in the claim 1 discussion, Doviak teaches isolating the host from the router logic. (See Doviak, Para. 10 & Fig. 1).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Costa et al. (U.S. Pat. No. 5787258) in view of Doviak et al. (U.S. Pub. No. 2003/0017845 A1) and further in view of Binder (U.S. Pub. No. 2002/0159402 A1).

Regarding claim 8, Costa teaches a ring network that detects a panel failure. (Col. 8 lines 30-50). When data cannot be passed beyond the down panel due to communication problems, the nodes of the network must reconfigure so as to bypass

the downed panel. (Col. 8 lines 30-50). Essentially, the routing logic contained within the panel is bypassed from the loop. Although Costa does not specifically mention the use of a transceiver, the system must contain a receiver and a transmitter or a transceiver to work. However, Binder discloses the use of a RS-485 transceiver using termination at each end of a connection. (Para. 57-58).

In light of these references, claim 8 is rendered obvious to one of ordinary skill in the art at the time of the claimed invention was made because termination is a well understood concept in RS-485 technology involving providing electrical resistance and fail safe biasing at the end of a line to prevent signal reflections.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over as being unpatentable over Costa et al. (U.S. Pat. No. 5787258) in view of Doviak et al. (U.S. Pub. No. 2003/0017845 A1) and in further view of Desmarais (Desmarais, Louis. Applied Electro-Optics. Prentice Hall 12/5/1997) and Curray et al. (U.S. Pub. No. 2003/0084112 A1).

Regarding claim 9, the combination of references discloses the use of an optocoupler for electrical isolation between the two internal elements. (See Desmarais, Pg. 244). Optocouplers are commonly used for high voltage isolation to protect the receiver circuit from any damaging over-voltage produced from switching or lightning induced surges. (See Desmarais, pg. 244). Although Applicant's claimed invention does not use high voltage, optocouplers are also used to protect against electrostatic discharges or surges. The combination of references further describes a RS-485

communication interface that utilizes optical isolation to protect against electrostatic discharges. (See Curray, Para. 55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention was made to utilize an optocoupler for separation and protection of various parts of the network.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN CLAWSON whose telephone number is (571)270-7498. The examiner can normally be reached on M-F 7:30-5:00 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis West can be reached on 571-272-7859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/STEPHEN CLAWSON/
Examiner, Art Unit 4172

/Lewis G. West/
Supervisory Patent Examiner, Art Unit 2618